Reliability Engineering (ENRE)

Graduate Degree Program
College: Engineering

Abstract
Reliability Engineering is an interdisciplinary program of the Department of Mechanical Engineering. The academic and research programs are based upon the recognition that the performance of a complex system is affected by engineering inputs that begin at conception and extend throughout its lifetime. Students may specialize in Assessment (Root-Cause Failure Analysis, Probabilistic Risk Assessment, Common-Cause Failures); Testing and Operation (Operator Advisory Systems, Human Reliability, Software Reliability); Manufacturing (Statistical Process Control, Improved Manufacturing Methods); Component and Structures Reliability (Microelectronics and Materials); or Electronic Packaging Reliability.

Financial Assistance
Financial assistance is available to highly qualified students in the form of research and teaching assistantships. The most outstanding applicants are offered fellowships. Students seeking financial assistance are asked to submit with their applications a current resume or CV as well as a statement regarding their qualifications and/or past research or teaching experience. Financial assistance is sought for all worthy students.

Contact
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Courses: ENRE

Admissions

General Requirements
• Statement of Purpose
• Transcript(s)
• TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements))

Program-Specific Requirements
• Letters of Recommendation (3)
• Graduate Record Examination (GRE) (recommended)
• CV/Resume
• Publications/Presentations

The Program offers graduate study leading to the Master of Science, Professional Master of Engineering (offered through the Office of Advanced Engineering Education), and Doctor of Philosophy degrees and is open to students who have a Bachelor of Science degree in engineering, physics, or mathematics and obtained a GPA of at least 3.0 on a 4.0 scale from accredited programs. An individual plan of graduate study compatible with the student's interest and background is established by the student in consultation with an advisor. In some cases, it may be necessary to require background courses to fulfill prerequisites.

For more admissions information or to apply to the program, please visit our Graduate School website: www.gradschool.umd.edu/admissions

Application Deadlines

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
<th>Spring Deadline</th>
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<tbody>
<tr>
<td>Domestic Applicants</td>
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<td>International Applicants</td>
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<tr>
<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
<td>15 Mar</td>
<td>28 Sep</td>
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Other Deadlines: Please visit the program website at http://www.enme.umd.edu

Requirements
• Reliability Engineering, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-phd)
• Reliability Engineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-ms)
Facilities and Special Resources

Students and faculty have access to a host of special facilities in the College of Engineering, including the nuclear reactor, an 8-MeV electron linear accelerator; environmental chambers; mechanical testing, SEM, X-ray and imaging facilities; and extensive computer resources. The program also has a complete failure analysis laboratory.

Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Graduate Faculty Status</th>
<th>Academic Credentials</th>
<th>Positions</th>
</tr>
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<tbody>
<tr>
<td>Ayyub</td>
<td>Bilal M.</td>
<td>Full Member</td>
<td>B.S., Kuwait University, 1980; M.S., Georgia Institute of Technology, 1981; Ph.D., 1983.</td>
<td>Professor, Applied Mathematics &amp; Statistics, and Scientific Computation Professor, Reliability Engineering Professor, Civil and Environmental Engineering Professor, Materials Science and Engineering Professor, Mechanical Engineering Professor, Reliability Engineering Associate Professor, Mechanical Engineering Associate Professor, Systems Engineering Affiliate Associate Professor, Electrical and Computer Engineering Affiliate Associate Professor, Computer Science</td>
</tr>
<tr>
<td>Christou</td>
<td>Aristos</td>
<td>Full Member</td>
<td>B.A., Columbia University, 1967; Ph.D., University of Pennsylvania, 1971.</td>
<td>Professor, Mechanical Engineering Professor, Reliability Engineering</td>
</tr>
<tr>
<td>Cukier</td>
<td>Michel</td>
<td>Full Member</td>
<td>Ph.D., National Polytechnic Institute of Toulouse, France, 1996</td>
<td>Professor, Mechanical Engineering Associate Professor, Systems Engineering Affiliate Associate Professor, Electrical and Computer Engineering Affiliate Associate Professor, Computer Science</td>
</tr>
<tr>
<td>Dasgupta</td>
<td>Abhijit</td>
<td>Full Member</td>
<td>B.S., Indian Institute of Technology-Madras, 1976; M.S., Villanova University, 1981; Ph.D., University of Illinois-Urbana/Champaign, 1983.</td>
<td>Professor, Mechanical Engineering Professor, Reliability Engineering</td>
</tr>
<tr>
<td>Gabriel</td>
<td>Steven</td>
<td>Full Member</td>
<td>B.A., Middlebury College, 1981; M.S., Stanford University, 1984; M.A., Johns Hopkins University, 1989; Ph.D., Johns Hopkins University, 1992</td>
<td>Professor, Reliability Engineering</td>
</tr>
<tr>
<td>Groth</td>
<td>Katrina</td>
<td>Full Member</td>
<td>B.S., University of Maryland-College Park, 2004; M.S., University of Maryland-College Park, 2008; Ph.D., University of Maryland-College Park, 2009</td>
<td>Assistant Professor, Reliability Engineering</td>
</tr>
<tr>
<td>Modarres</td>
<td>Mohammad</td>
<td>Full Member</td>
<td>B.S., Tehran Polytechnic Institute, 1974; M.S., Massachusetts Institute of Technology, 1976; Ph.D., 1979. GCEN Academic Advisor for Nuclear Engineering GCEN Academic Advisor for Reliability Engineering GCEN Co-Director, Reliability Engineering Professor, Mechanical Engineering Professor, Reliability Engineering</td>
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</tr>
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</table>

GCEN Academic Advisor for Nuclear Engineering GCEN Academic Advisor for Reliability Engineering GCEN
Mosleh Ali Full Member B.S., University of Technology-Tehran, 1975; M.S., University of California-Los Angeles, 1978; Ph.D., 1981. Director, Reliability Engineering Professor, Mechanical Engineering Professor, Reliability Engineering

Pertmer Gary A. Full Member B.S., Iowa State University, 1971; M.S., University of Missouri-Columbia, 1973; Ph.D., 1978. Associate Professor, Mechanical Engineering Associate Professor, Reliability Engineering

Roush Marvin L. Full Member B.Sc., Ottawa University, 1956; Ph.D., University of Maryland-College Park, 1964. Professor Emeritus, Reliability Engineering

Sandborn Peter A. Full Member B.S., University of Colorado-Boulder, 1982; M.S., University of Michigan-Ann Arbor, 1983; Ph.D., 1987. Professor, Mechanical Engineering Professor, Reliability Engineering

Vaughn-Cooke Monifa Full Member B.S., The University of Southern California; M.S., The University of Southern California; Ph.D., The Pennsylvania State University Assistant Professor, Mechanical Engineering Assistant Professor, Reliability Engineering